US Army Corps of Engineers
St. Paul District

Information Paper

Water-Level Management: Upper Mississippi River, Iowa, Minnesota and Wisconsin

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Location/Description
Construction of a series of locks and dams on the Upper Mississippi River created the nine-foot navigation channel. Dredging is also required to maintain the navigation channel. The project reach on the Upper Mississippi River in the St. Paul District extends from river mile 614.0 at Guttenberg, Iowa, to the head of navigation at river mile 857.6 at Minneapolis, Minn. The nine-foot navigation channel also extends 14.7 miles up the Minnesota River, 24.5 miles up the St. Croix River, and 1.4 miles up the Black River. Thirteen navigation locks and dams are located on the Upper Mississippi River within the St. Paul District.

Project background
The authorized purpose of the dams on the Upper Mississippi River is to maintain water levels at adequate depths for commercial navigation. The dams have little or no effect on flood flows on the river. The dams maintain a minimum pool below which water levels are not allowed to fall. The maximum drawdown allowed at any dam is one foot. The actual operating band for each navigation pool is relatively small, at plus or minus 0.2 foot in the summer and plus or minus 0.3 foot in the winter.

River resource management agencies and the public have expressed a growing interest in using the water-level management capabilities of the navigation dams to provide ecological benefits on the Upper Mississippi River. In 1996, in coordination with river resource management agencies, the St. Paul District completed a limited study of the potential for generating ecological benefits through changes in water- level management of the navigation pools. The study results indicated there were alternative management measures that had the potential to provide ecological benefits while still maintaining water depths necessary for commercial navigation. The most significant of these measures would be summer drawdowns of the pools.

The district initiated a study to evaluate the potential for a partial drawdown of a navigation pool during the growing season to enhance conditions for the growth of aquatic vegetation. Analysis and screening conducted to date narrowed the potential to pools 5, 7, 8, and 9. Pool 8 was selected in February 1998 for more detailed evaluation. A report completed in June 1999 recommended a pilot project for a drawdown of 1.5 feet for pool 8 during the period June 15 through September 30. The pilot drawdown started on June 30, 2001 and is scheduled for completion in September 2001. Extensive monitoring is ongoing to assist in the post-project evaluation of the drawdown.

Status
The district completed a limited study to investigate whether changes in water-level operations at the locks and dams would enhance the ecosystem of the river. The district has identified additional studies to further evaluate and implement water-level management alternatives. One of the additional studies completed was an evaluation of the potential for a partial drawdown of a navigation pool during the growing season to enhance conditions for aquatic vegetation.

Authority
The Rivers and Harbors Act of 1930 authorizing the nine-foot navigation channel on the Upper Mississippi River provides the authority for the study.

Fiscal

Estimated federal cost	$850,000
Estimated non-federal cost	$0
Total estimated cost	$850,000

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